

## 9 Session 7: Energy Saving Performance Contracts: Forms and Financing Options

Overview of Activities Related to Energy Efficiency Improvement in Finland.

Presenter: Mr. Jorma Pietilainen. VTT, Finland.



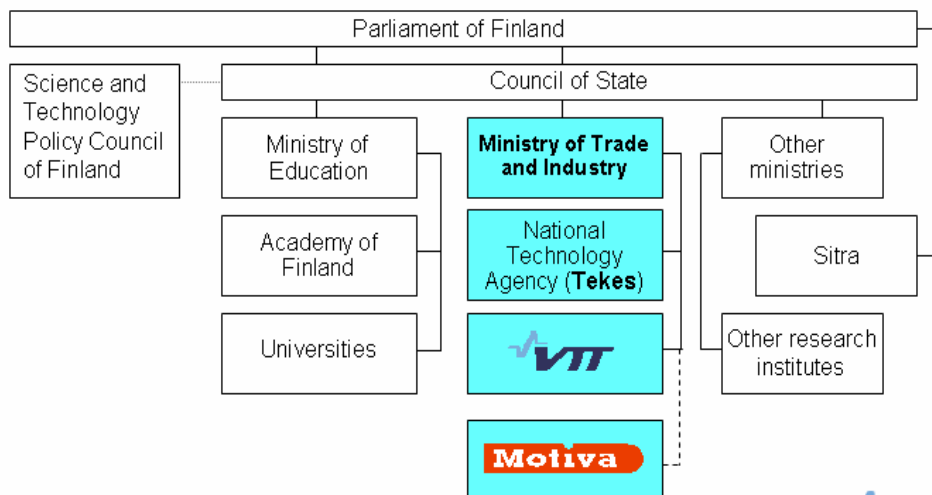
*Overview of some activities related to  
energy efficiency improvement in Finland*

*Jorma Pietiläinen*



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## THE MOST IMPORTANT DECISION MAKERS, FINANCERS AND PERFORMERS OF RESEARCH IN THE PUBLIC SECTOR



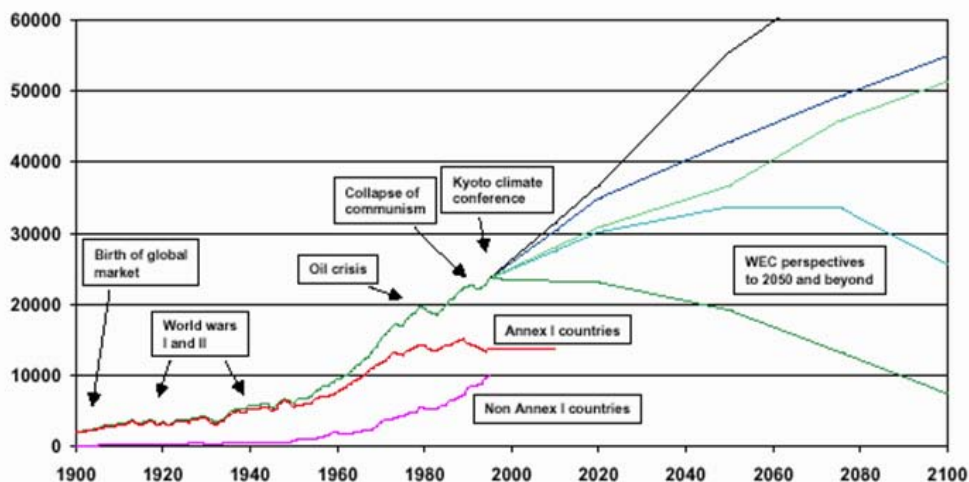
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## Global CO<sub>2</sub> emissions (MtCO<sub>2</sub>/a) 1900-2100



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## Environmental threats:







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## Energy Conservation Programme

-  Launched in 1992
-  Revised and intensified in 1995
-  Intensified in 2000  
(as a part of preparing the National Climate Strategy)
-  Updated 2002

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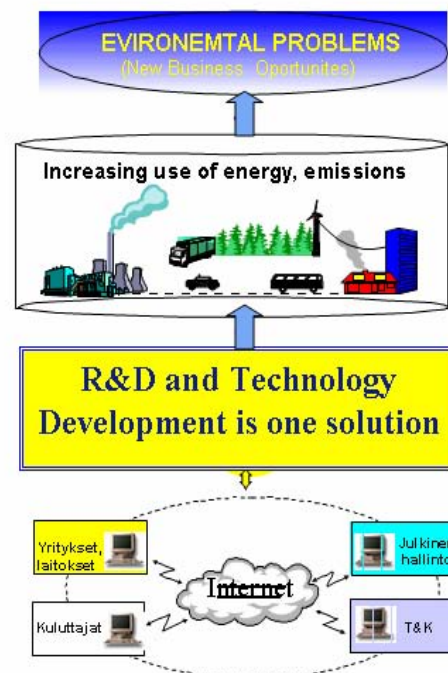
## The key elements of Energy Conservation Programme:

-  Development and commercialisation of energy efficient **technology**
-  Economic means of steering
-  Building **regulations** (e.g. new EU Directive)
-  Voluntary energy conservation agreements
-  Energy audits and ESCO activities
-  Information, training and motivating activities

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# CUBE

BUILDING SERVICES  
TECHNOLOGY PROGRAMME 2002-2006

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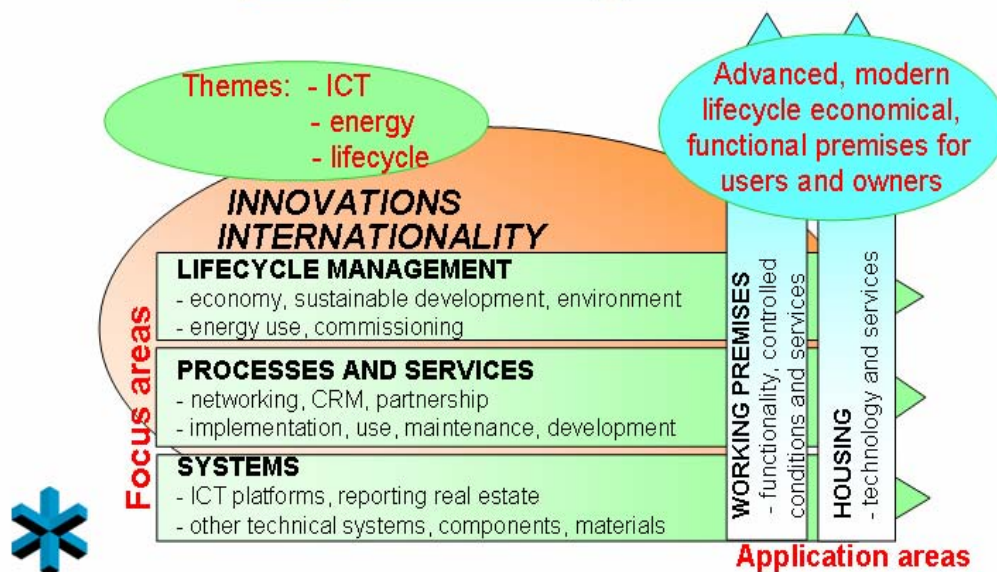
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**CUBE**  
BUILDING SERVICES  
TECHNOLOGY PROGRAMME 2002-2006

## Technology program themes, and development activity focuses and application areas



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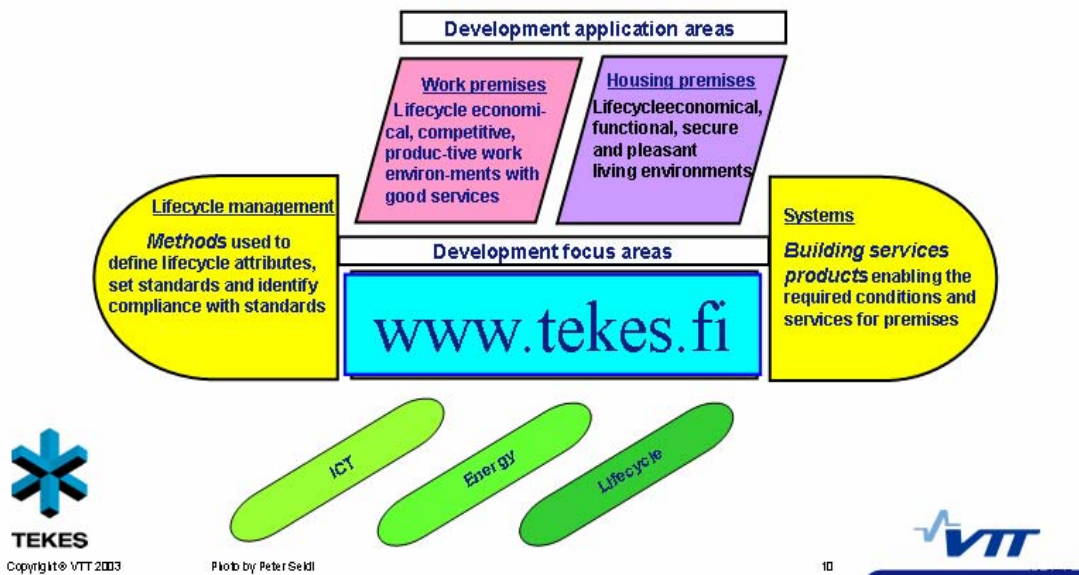
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## Objectives by focus area and application



## VTT IN BRIEF

### Units:

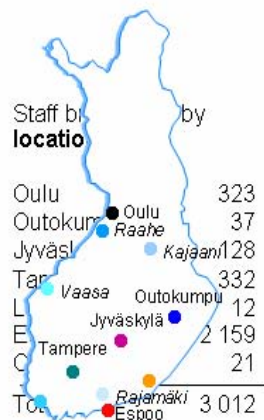
VTT Electronics  
VTT Information Technology  
VTT Industrial Systems  
VTT Processes  
VTT Biotechnology  
**VTT Building and Transport**

VTT Information Service  
VTT Corporate Management and Services

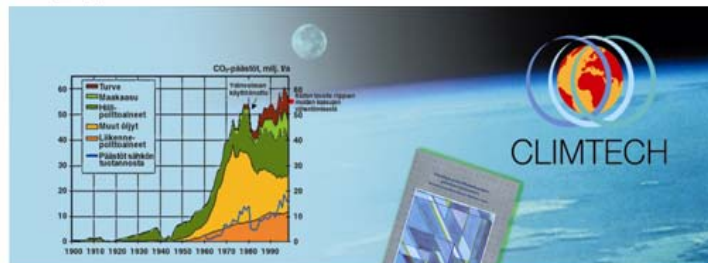
**Staff: 3 012**

**Turnover: 214 M€**

- Basic govern. funding to R&D on VTT's own initiative 34 M€
- Jointly funded projects 92 M€
- Commercial activities 88 M€



## Support for National Climate Strategy



VTT has prepared a report for the Finnish Ministry of Trade and Industry on the technological development outlook for the control of greenhouse gas emissions. The report is intended to support decisions concerning the National Climate Strategy.

VTT has also participated in studies of the economic effects of reducing greenhouse gas emissions.

## Development of Low-energy houses

Heating energy consumption less than half of conventional buildings  
=> reduced emissions

Good indoor air and demand controlled, i.e. adjustable ventilation

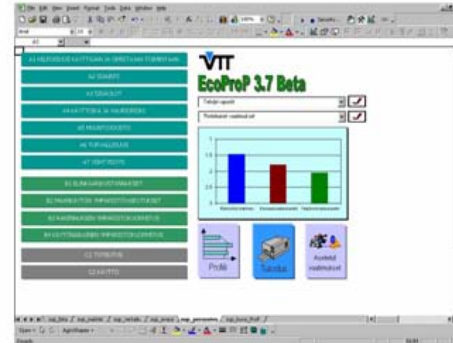
Reduced life-cycle costs





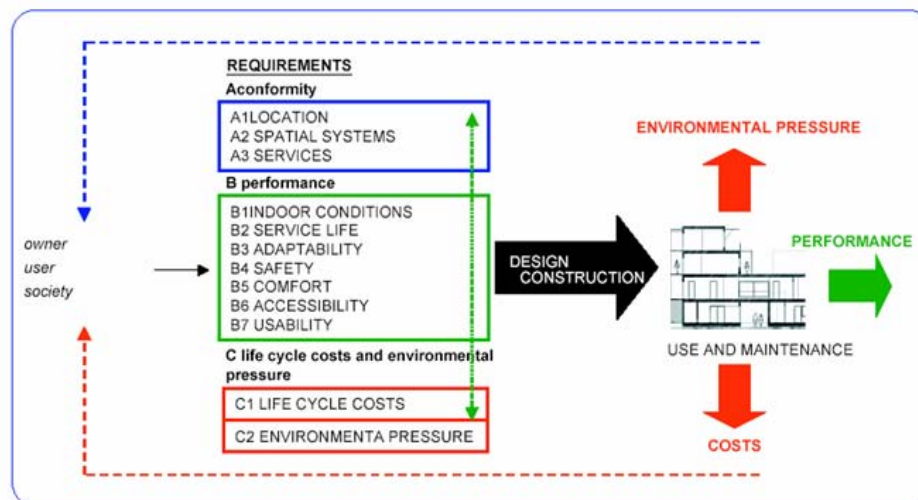
## Tools for managing life-cycle costs and environmental requirements

• VTT Building Technology has developed tools for calculation of life-cycle costs and for management of environmental requirements, such as a method for classifying life-cycle cost calculation methods, a system for assessing the life-cycle costs of technical systems and EcoProp system for management of environmental requirements

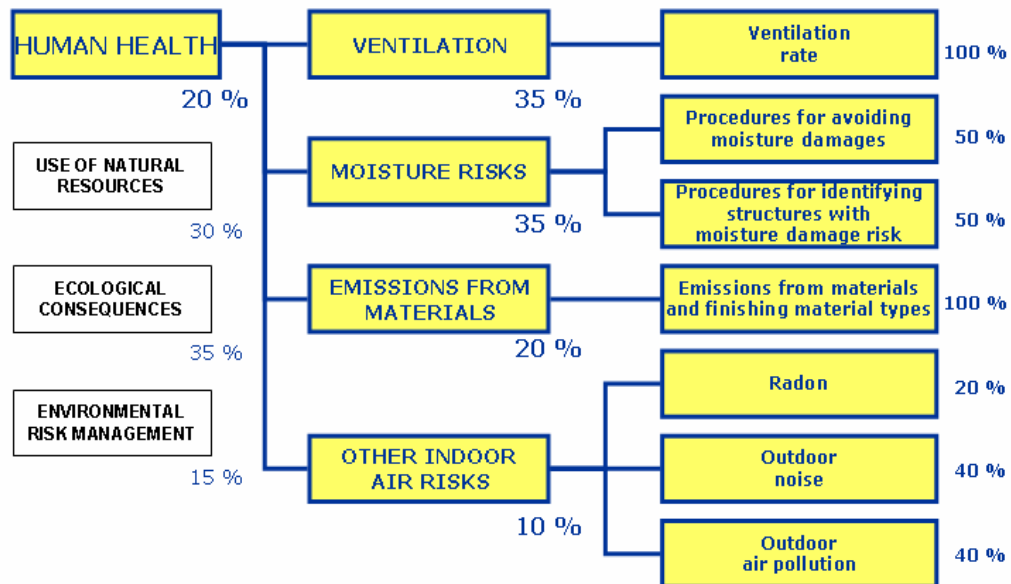


• EcoProp can be used to numerically define the performance characteristics and environmental characteristics of a building on the basis of the needs of the property owner and occupants, and design solutions can be developed to meet the set targets; the inclusion of life-cycle costs quickly reveals whether the desired level of requirements is in conflict with the cost targets

## Requirements management - EcoProp



## PromisE - environmental classification for buildings:

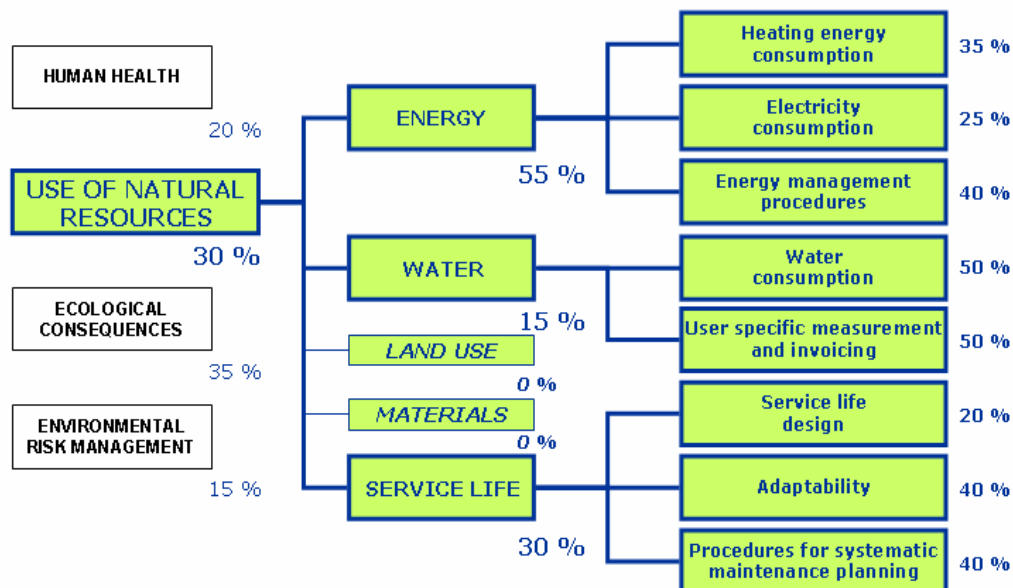


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16



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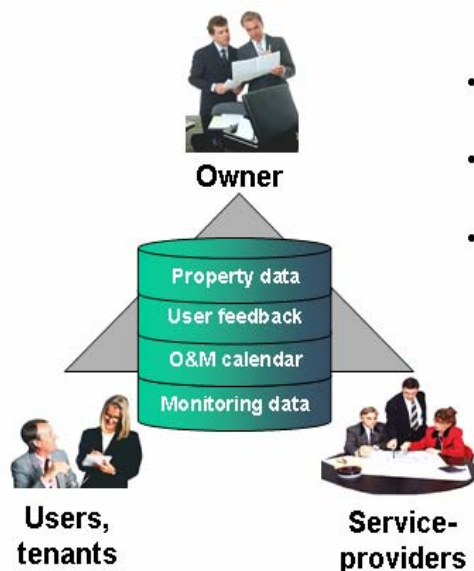
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## OIWA, web-based O&M Manual



- Up to date information to all partners
- User feedback and maintenance history utilised continuously
- Transparent QA

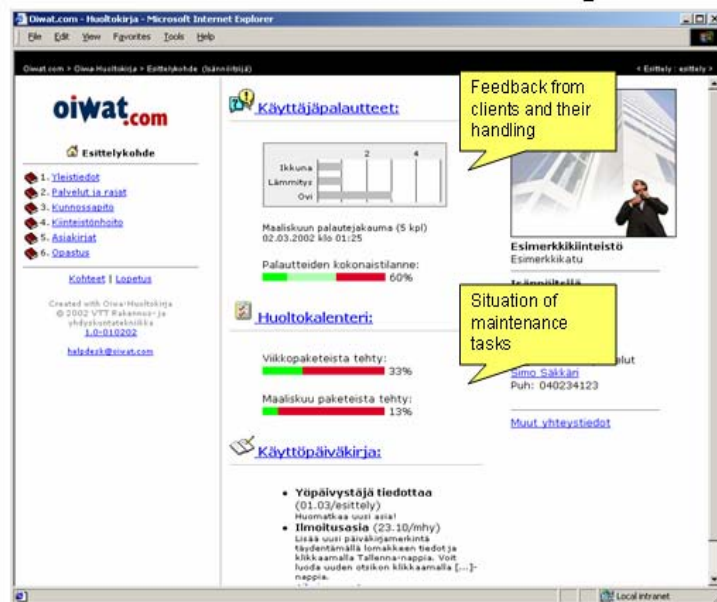
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## User Interface for House Manager



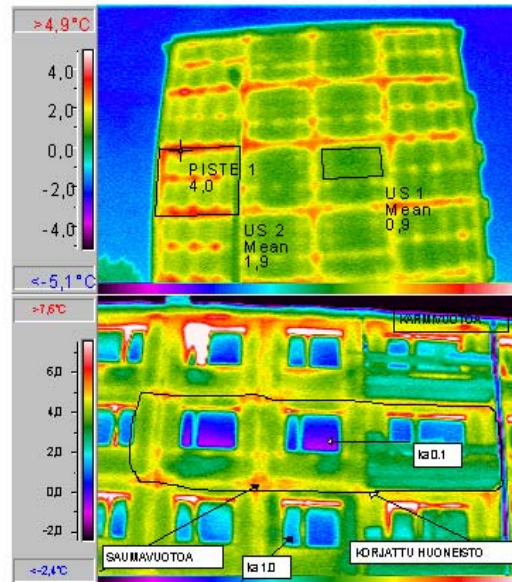
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## Thermography in building commissioning



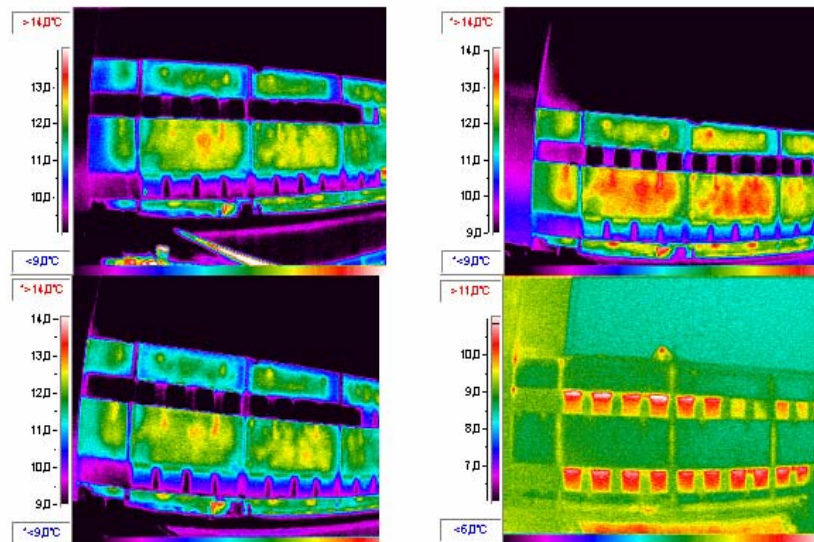
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## Moisture problems in the concrete sandwich panel



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## VTT develops effective tools for Energy



⇒ Monitoring & Targeting

⇒ Benchmarking

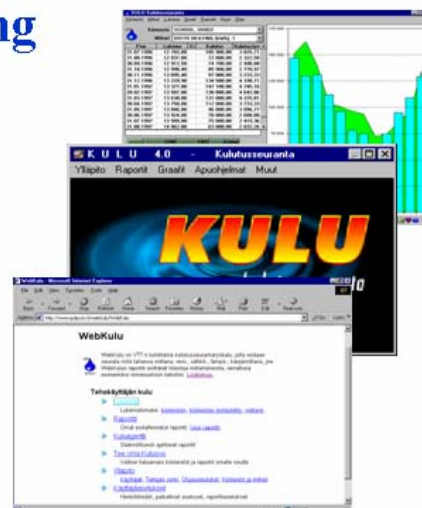
⇒ Analysing

⇒ Auditing

⇒ Assessment

⇒ Feedback

⇒ Motivation



## Monitoring = Basis for Everything!

- Reliable consumption data forms the **basis** for energy retrofitting and saving measures

- **Verification** of implemented saving measures is impossible without reliable consumption figures:

$$😊 \text{ Energy Saving} = \text{Baseline Energy Use} - \text{Post Installation Energy Use}$$

- Monitoring can be used to implement the **Building Energy Certification** schemes (see Energy Star of EPA/USA)

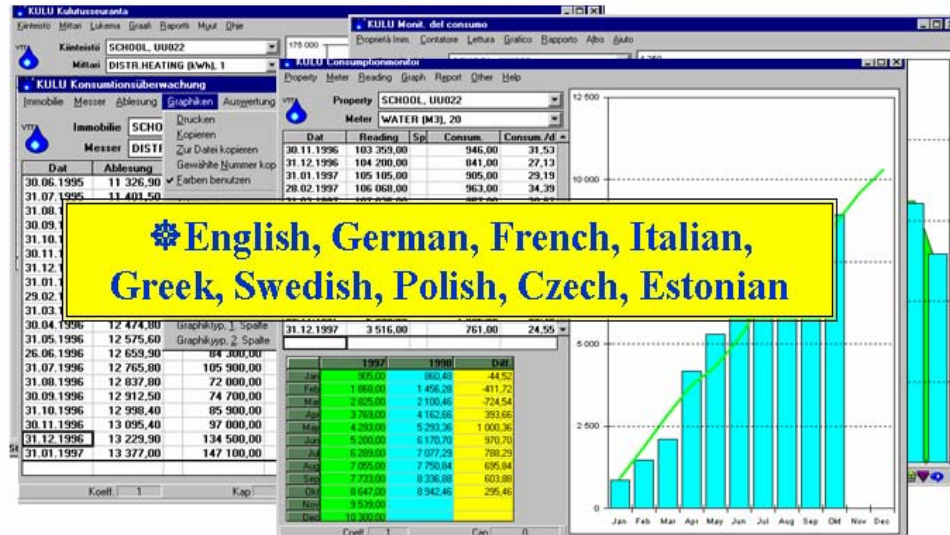
- **Feedback** for M&O personnel is the key (basis for motivation, training etc.)

- **Statistics**, etc. information, **decision makers**, **designers**, **users**, **owners**, **authorities** etc. etc. **must** be produced too





## Support for several languages



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## More professional tools for big organisations:

like Portable Bar  
Code Scanner

KAUKOL.ENERGIA



MI00800001



for effective meter  
reading and data  
collection e.g. in the  
Ministry of Defence in  
Finland!

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25







## Modern ICT will be utilised in collaboration with Finnish companies!



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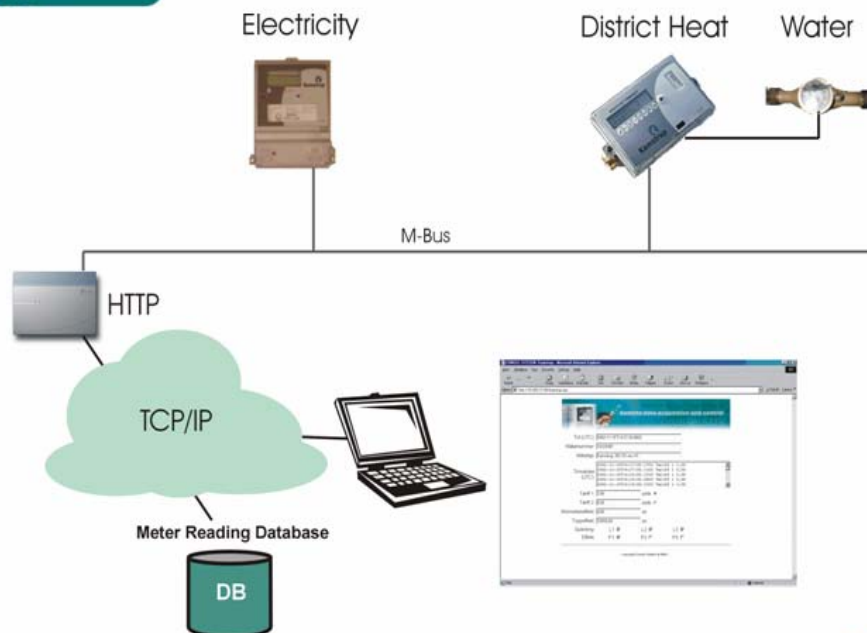
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### M-Bus

### Comsel M-Bus solution



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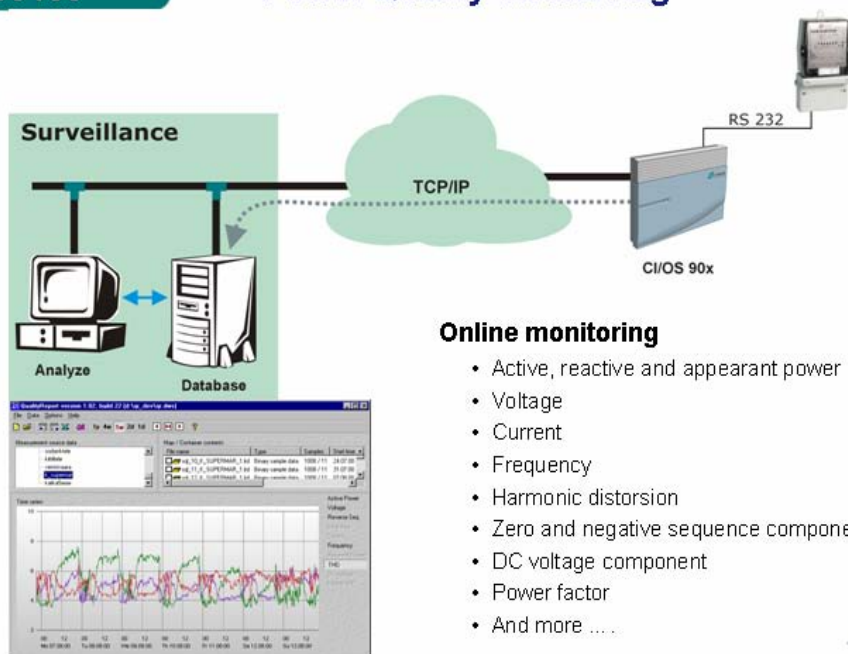
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## EN50160

## Power Quality Monitoring



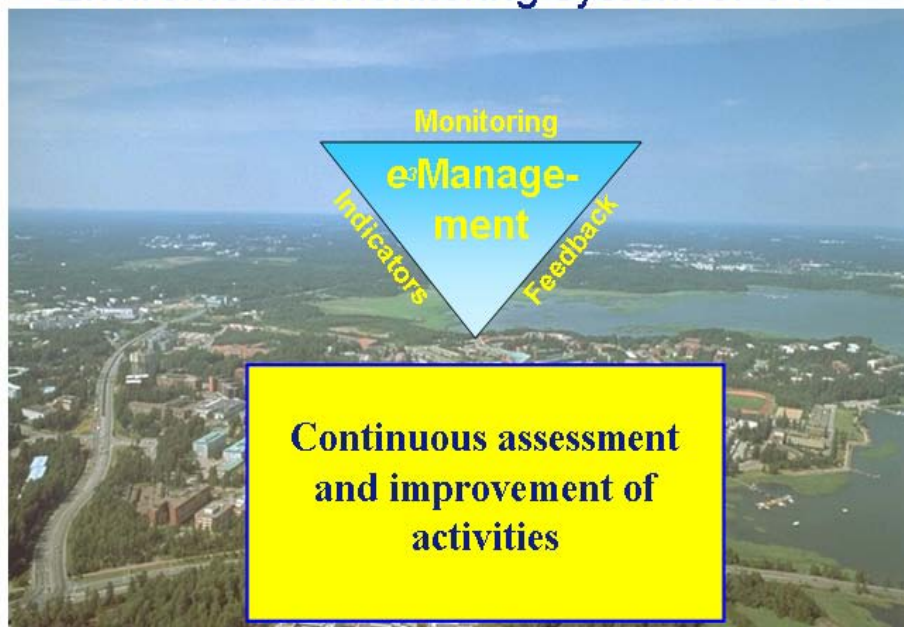
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## Enviromental monitoring system of VTT



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31



## VTT BUILDING AND TRANSPORT

rakennus,PohjaK Map

30002100 Lämpömiehenkj.2 , 24060 m<sup>3</sup>Vuosikulutukset, (omin.=ominaiskulutus vesi-l/m<sup>3</sup>, muut-kwh/m<sup>3</sup>)

	- L ä m p ö - s ä ä k o r j.		- L ä m p ö -		- S ä h k ö -		- V e s i -	
Vuosi	(MWh)	omin.	(MWh)	omin.	(MWh)	omin.	(m <sup>3</sup> )	omin.
1996	674	28	697	29	221	9	7.574	315
1997	653	27	628	26	219	9	7.990	332
1998	680	28	651	27	211	9	7.254	301
1999	453	19	434	18	203	8	1.457	61
2000	527	22	452	19	482	20	1.742	72
2001	1.066	44	1.030	43	861	36	2.186	91
2002	975	41	941	39	682	28	1.843	77
2003	650	27	663	28	464	19	1.436	60



Map created on 6.3.2003.



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32



## VTT BUILDING AND TRANSPORT

e<sup>3</sup>Portal :

★ energy

★ economy

★ environment

## 1. Updating of basic data (consumptions)

Monitoring&data collection  
as part of daily M&O  
activities in municipalities

## 2. Data transfer



standard interface

3. Validation etc.  
(VTT)

Validation, verification, validation



Energy efficiency of Buildings

PORTAL

4. Addition and update  
(consumption etc.)

Transfer, monitoring, EPCO, etc. parties, others, support

## 5. Dissemination



networking



Comparison, analysis, benchmarking

VTT

Comparison, analysis, benchmarking

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## VTT BUILDING AND TRANSPORT

ENERGY ENVIRONMENT ECONOMY

34

Energy Management

- Setting Targets
- Monitoring of cons.
- Benchmarking
- Saving measures
- Best Practices
- Toolbox
- Clearinghouse
- Help

Hae  OK

e3P-1.0-


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yhdyiskuntateknikka

## e3Portal for Municipal Buildings

Energiatehokkuus on tärkeä osa kestävä kehityksen toteutumista kunnissa ja kuntayhtymissä.

Tarkoituksenmukaisella ja tehokkaalla energiankäytöllä vähennetään ilmastomuutosta aiheuttavia kasvihuonekaasupäästöjä ja säästetään ympäristöä myös jalkipolville.

e3P palvelun esittelyversion tarkoituksena on konkretisoida palvelun mahdollista sisältöä, toimintaa ja hyödyntämismahdollisuuksia.



### Latest News!

10.9.2003 [e3Portaali Kuntamarkkinoilla](#)

10.9.2003 [e3Portaali jaloittaa kulutuslukemia tiedoksi](#)

Ensimmäinen Etä-yhteistyö

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Motiva

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## VTT BUILDING AND TRANSPORT

ENERGY ENVIRONMENT ECONOMY


35

Energy Management

Kiinteistön energianhallinta on prosessi, jonka tavoitteena on ylläpitää kiinteistössä hyvät sisäolosuhteet ja palvelutaso mahdollisimman pienellä energiankulutuksella ja kustannuksilla. Energianhallinta voidaan prosessina jakaa pitkän ja lyhyen tähtäimen toimintoihin

Lataa energianhallintakuva Power Point muodossa.

### Energy Management Strategies



Pitkän tähtäimen energianhallinnalla pyritään vaikuttamaan energiankäytön rakenteeseen mm. pitkävaikutteisten

Hae  OK

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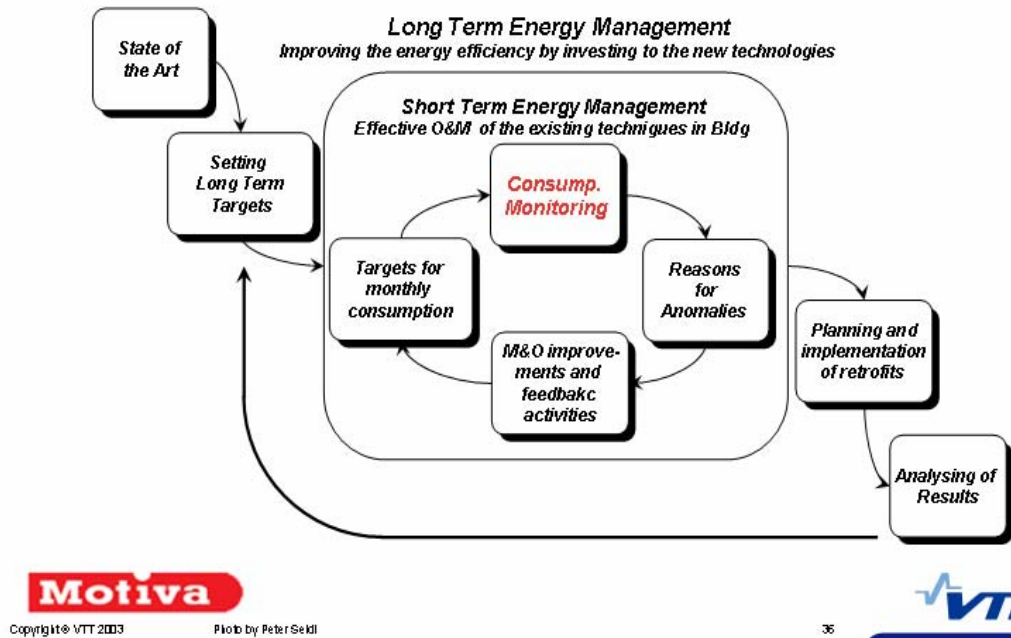
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## Energy Management Strategies



**e3 ENERGY ENVIRONMENT ECONOMY**

på svenska | in English

**Consumption Information and Benchmarking**

e3Portaalin tuottamien raporttien selaaminen edellyttää kirjautumista. Kirjautumista edellyttävät otsikot on erotettu sinisellä nuolella ( > ).

Kirjaudu e3P raportointiin

Käyttäjätunnus:

Salasana:

OK

Hae  OK

http://webkulu.vtt.fi/e3p/sivu.asp?page=4.2

Local intranet



## Benchmarking - an effective tool

### Specific Consumption of Energy in some Schools of Helsinki

Heating		(kWh/m <sup>3</sup> )				Total cons. year 1999 (MWh)
Code	School	1996	1997	1998	1999	
HEL21187	Kontulan	81,1	83,1	89,4	82,2	.218
HEL21690	Pukinmäen	24,7	87,3	93,5	81,8	110
HEL21648	Pohjois-H	64,9	71,7	86,7	74,6	42
HEL21186	Pakilan y	44,7	62,3	66,4	61,8	.270
HEL21198	Vesalan y	52,6	53,8	54,3	57,5	.343
HEL21146	V...	48,5	44,5	58,8	58,8	.105
						828
						.531
						454
HEL21143	Jakomäen	41,6	40,4	44,6	44,3	.211
HEL21055	Oulunkylä	45,3	45,3	54,8	43,9	828
HEL21185	Pakilan a	41,7	42,5	44,2	43,8	765
HEL21236	Käpylän y	35,5	38,0	39,3	38,6	.145
HEL21017	Vallilan	37,2	33,6	39,6	35,6	582
In average		47,2	49,1	57,4	50,6	

**for Best Practice Dissemination!**

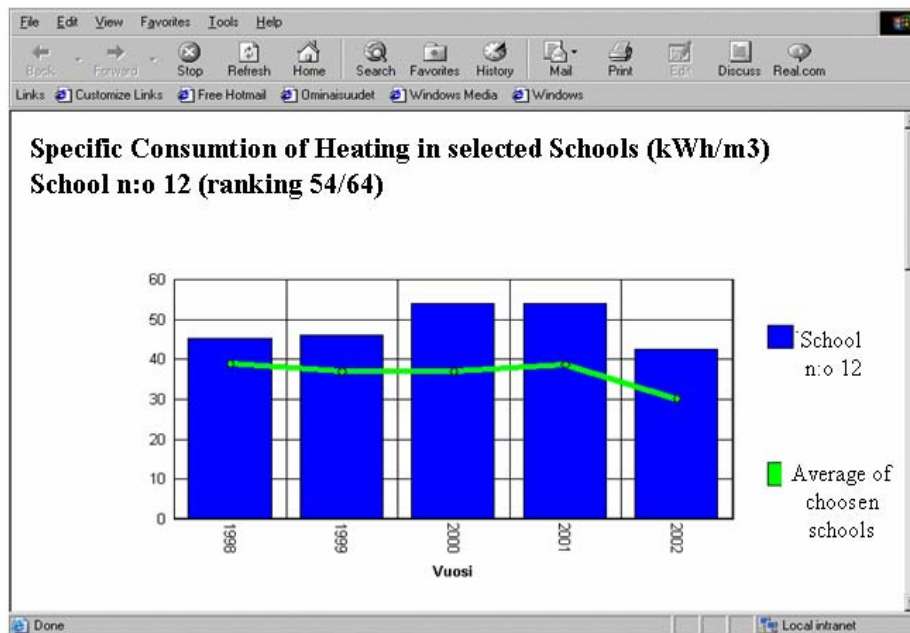
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## Benchmarking Services:

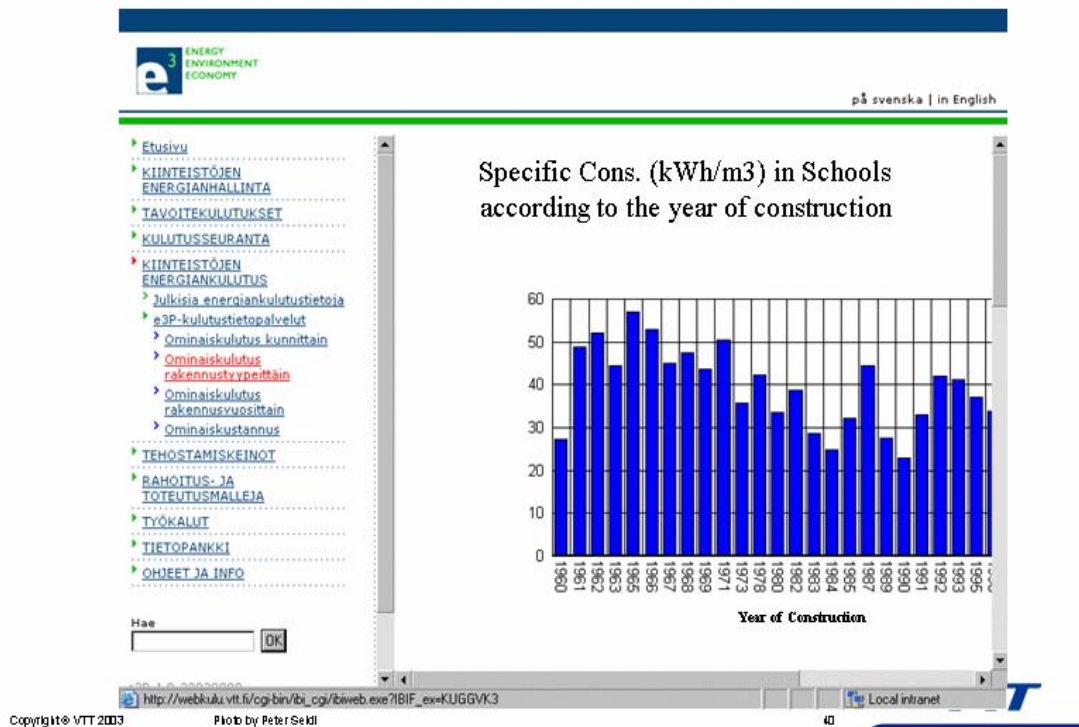


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**e3 ENERGY ENVIRONMENT ECONOMY**

på svenska | in English

Etusivu  
KIINTEISTÖJEN ENERGIANHALLINTA  
TAVOITEKULUTUKSET  
KULUTUSSEURANTA  
KIINTEISTÖJEN ENERGIANKULUTUS  
TEHOSTAMISKEINOT  
**Energiakatselmukset**  
Tietoja katselmoituista kohteista  
Yleisimmät säästötoimenpiteet  
RAHOITUS- JA TOTEUTUSMALLEJA  
TYÖKALUT  
TIETOPANKKI  
OHJEET JA INFO

Hae

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### Energy Auditing

Energiankäytöltään ja elinkaaren vaiheeltaan erilaisille kohteille on kehitetty räätälöityjä energiakatselmusmalleja tarpeen mukaan. Esimerkkeinä kohteen energiankäytön mukaan räätälöidystä katselmusmalleista ovat pieniin rakennuksiin soveltuva Energiakatsastus ja paljon energiaa käyttäviin kohteisiin soveltuvat energia-analyytit. Eri elinkaaren vaiheeseen sopivia katselmusmalleja ovat Käyttöönottokatselmus ja Seurantakatselmus.

Yhteistä kaikille katselmusmalleille on, että energiakatselmus on aina kokonaisvaltainen energian ja veden käytön tarkastelu, jonka perusteella tuodaan esiin kannattavat säästötoimenpiteet. Toinen yhteinen piirre katselmusmalleille on, että mallit on kehitetty käytännön katselmustyöstä saatujen kokemusten perusteella.

Energiakatselmus toimii osana kulutusseurantaa, kiinteistönpitoprosessia sekä energia- ja ympäristöasioiden hallintaa. Energiakatselmuksen avulla energiankäyttö tehostuu ja entistä tehokkaampi energiankäyttö merkitsee säästöjä energia- ja vesikustannuksissa.

*Energiakatselmus toimii osana kulutusseurantaa, kiinteistönpitoprosessia sekä energia- ja ympäristöasioiden hallintaa.*



på svenska | in English

- Etusivu
- KIINTEISTÖJEN ENERGIANHALLINTA
- TAVOITEKULUTUKSET
- KULUTUSSEURANTA
- KIINTEISTÖJEN ENERGIANKULUTUS
- TEHOSTAMISKEINOT
  - Energiakatselmukset
  - Tietoja katselmoiduista kohteista
  - Yleisimmät säästötoimenpiteet
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## Audited School Buildings

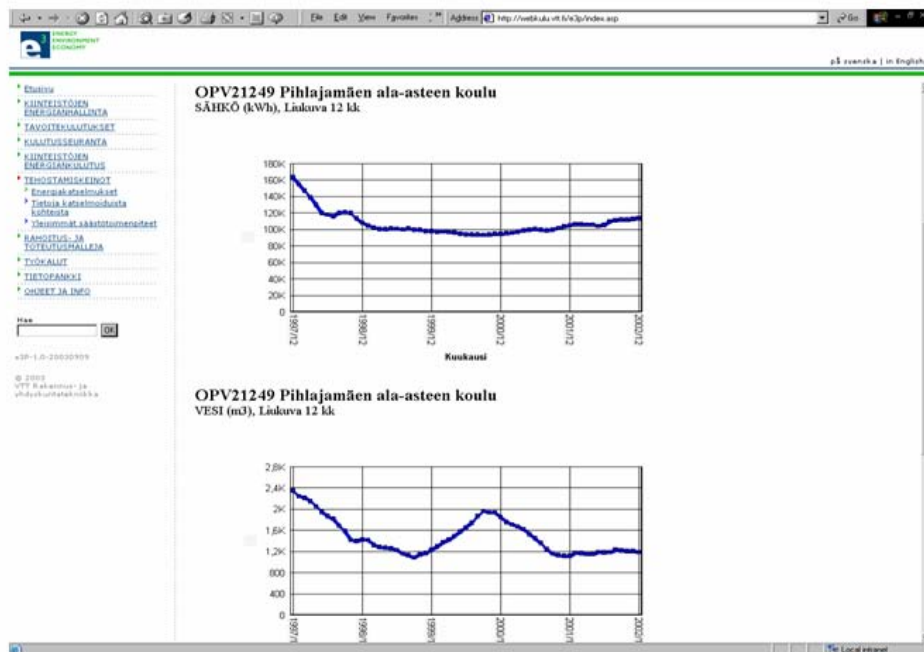
Koodi Kohde

OPV21130 [AMK/TEI/Onnentie 18](#)  
 OPV21498 [Ala-Malmin peruskoulu](#)  
 KIV11899 [Aleksanterinkatu 26-28](#)  
 OPV21961 [Aleksis Kiven peruskoulu](#)  
 OPV21261 [Alppilan yläasteen koulu & lukio](#)  
 KIV41900 [Annankadun taidekeskus](#)  
 OPV21346 [Botby högstadieskola & Blomängens lge](#)  
 OPV21294 [Brändö lågstadieskola & gymnasium](#)  
 OPV21920 [Cygnaeus lågstadieskola](#)  
 KIV11053 [Dagmarinkatu 6](#)  
 OPV21966 [Eläintarhan ala-asteen koulu](#)  
 KIV51508 [Ensihuoltolaitos](#)  
 KIV41250 [Etela-Hasanin sivukirjasto](#)  
 OPV21348 [Etela-Kaarelan yläasteen koulu & lukio](#)  
 OPV21973 [Etu-Töölön yläasteen koulu & lukio](#)  
 OPV21338 [Gymnasiet Lärkan & Haga lågstadieskola](#)  
 OPV21703 [HELP/Kauneudenhoitoalan koulutusyksikkö](#)  
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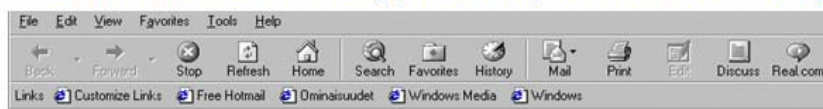


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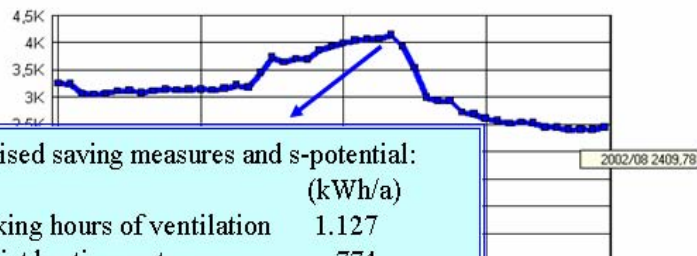
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## Information about energy audits (measures&effect):



### Sports hall

Electricity, sum of gliding 12 months



#### Sports hall 1, realised saving measures and s-potential:

	(kWh/a)
- Decreasing working hours of ventilation	1.127
- Decreasing district heating water	774
- Energy efficient lighting	673
- Night and weekend setback	219
- total:	2.793

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# Motiva

Motiva is an impartial service organisation promoting a market for renewable energy sources and efficient energy use.

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## Business Idea

Motiva implements

- the National Climate Strategy,
- the Energy Conservation Programme and
- the Action Plan for Renewable Energy Sources

by activating the market for energy conservation,  
energy efficiency and renewable energy sources.





## What is an Energy Audit?

- With energy audits we mean a systematic procedure in existing buildings/ sites/objects where the purpose is to
  - evaluate the existing energy consumption
  - identify the energy saving potential and find the potential of renewable energy sources
  - report and make detailed saving proposals

## Energy auditing in Finland

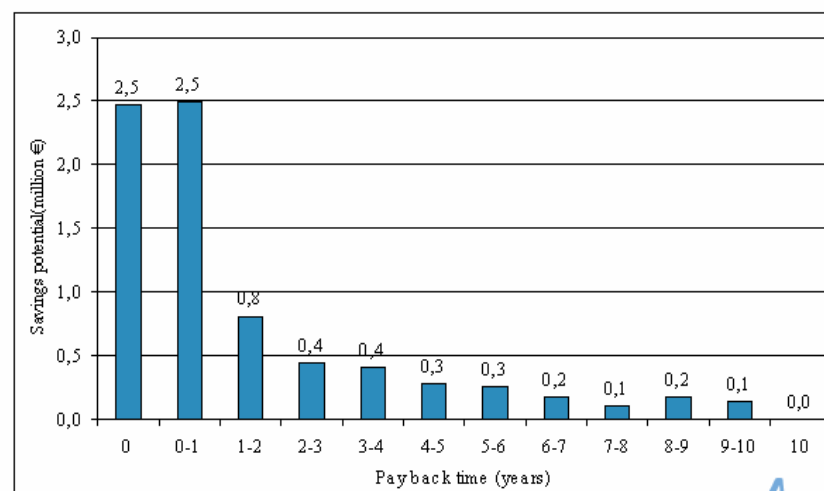


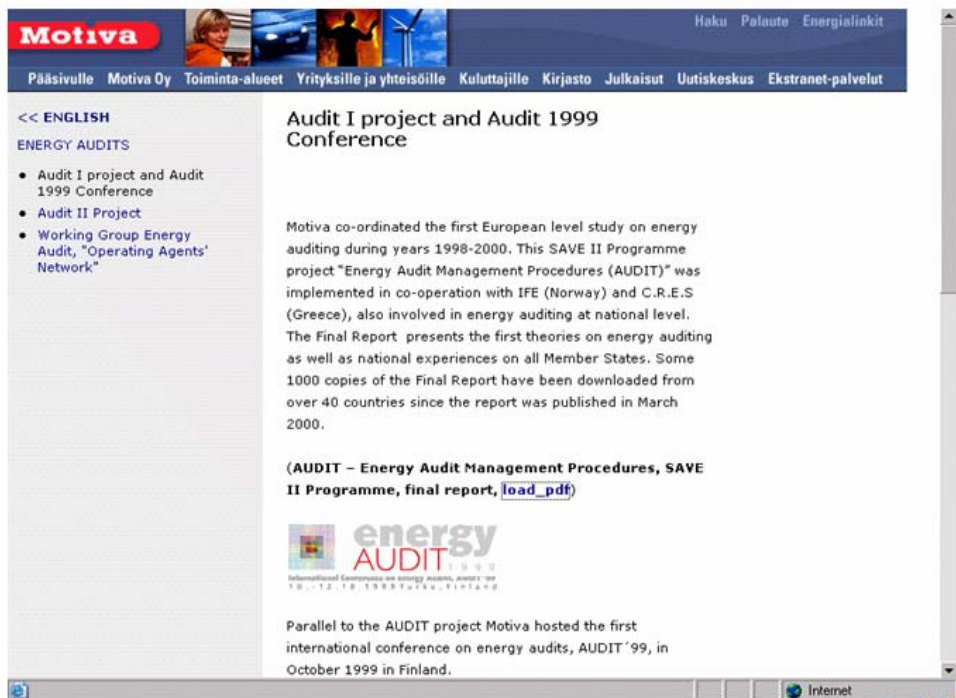


## Subsidy policy

- Energy Auditing is **voluntary**
- Following the **Audit Guidelines** given by Motiva and MTI entitles the client to apply for audit subsidies
- The subsidy is specified yearly
- In 2002 the subsidy is 40 % of the approved auditing costs
- Subsidies for energy saving investments are available for companies etc. in Voluntary Agreements

## Profitability of the proposed energy savings measures in the 1 265 buildings reported during period 1996-2001 (total 8,0 milj. €)





**Motiva**

Haku Palaute Energialinkit

Pääsivulle Motiva Oy Toiminta-alueet Yrityksille ja yhteisöille Kuluttajille Kirjasto Julkaisut Uutiskeskus Ekstranet-palvelut

<< ENGLISH


ENERGY AUDITS

- Audit I project and Audit 1999 Conference
- Audit II Project
- Working Group Energy Audit, "Operating Agents' Network"

## Audit I project and Audit 1999 Conference

Motiva co-ordinated the first European level study on energy auditing during years 1998-2000. This SAVE II Programme project "Energy Audit Management Procedures (AUDIT)" was implemented in co-operation with IFE (Norway) and C.R.E.S (Greece), also involved in energy auditing at national level. The Final Report presents the first theories on energy auditing as well as national experiences on all Member States. Some 1000 copies of the Final Report have been downloaded from over 40 countries since the report was published in March 2000.

(AUDIT – Energy Audit Management Procedures, SAVE II Programme, final report, [load pdf](#))



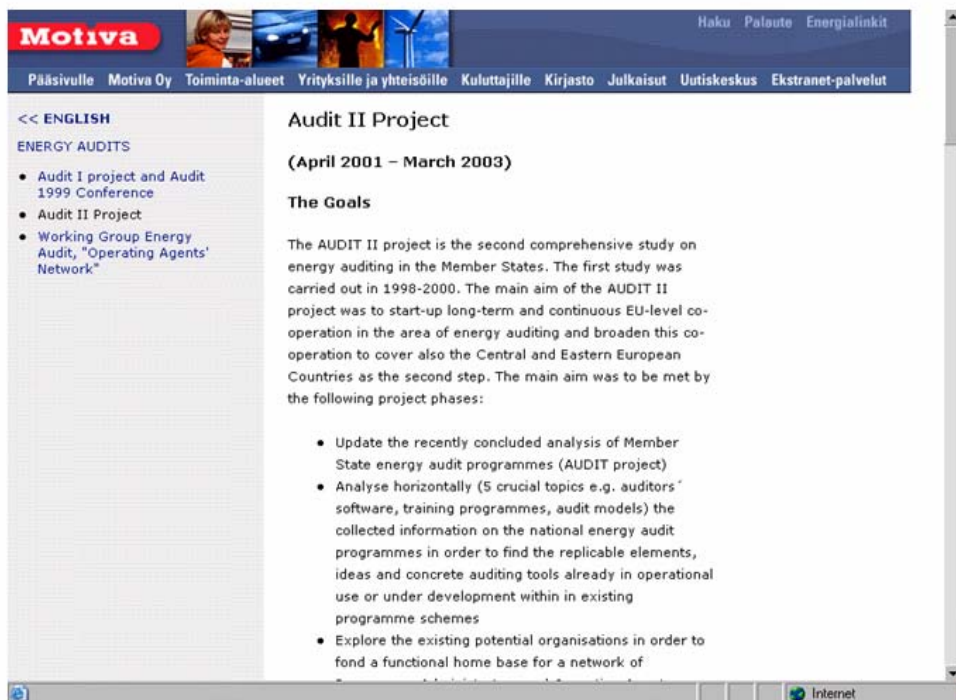
Parallel to the AUDIT project Motiva hosted the first international conference on energy audits, AUDIT'99, in October 1999 in Finland.

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<< ENGLISH

ENERGY AUDITS

- Audit I project and Audit 1999 Conference
- Audit II Project
- Working Group Energy Audit, "Operating Agents' Network"

## Audit II Project

(April 2001 – March 2003)

### The Goals

The AUDIT II project is the second comprehensive study on energy auditing in the Member States. The first study was carried out in 1998-2000. The main aim of the AUDIT II project was to start-up long-term and continuous EU-level co-operation in the area of energy auditing and broaden this co-operation to cover also the Central and Eastern European Countries as the second step. The main aim was to be met by the following project phases:

- Update the recently concluded analysis of Member State energy audit programmes (AUDIT project)
- Analyse horizontally (5 crucial topics e.g. auditors' software, training programmes, audit models) the collected information on the national energy audit programmes in order to find the replicable elements, ideas and concrete auditing tools already in operational use or under development within in existing programme schemes
- Explore the existing potential organisations in order to find a functional home base for a network of

Internet

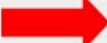
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**Motiva**



**The Guidebook for Energy Audit Programme Developers**

Guidebook for Energy Audit Programme Developers  
(GB\_Printversion.pdf, size 834 kB)

**The Topic Reports**

**TR Monitoring and Evaluation:** Published September 2002  
(AUDIT II Topic Report, pdf, 221 kB)

**TR Energy Audit Models:** Published April 2003  
(AUDIT II Topic Report, pdf, size 309 kB)

**TR Training, Authorisation and Quality Control:**  
UPDATED September 2002  
(AUDIT II Topic Report, pdf, size 241 kB)

**TR Auditor's Tools:** Published August 2002  
(AUDIT II Topic Report, pdf, size 193 kB)

**TR Implementing Instruments:** Published September 2002  
(AUDIT II Topic Report, pdf, 230 kB)

**The Country Reports, Group I**

**CR Austria:** Published August 2002  
(AUDIT II Country Report - Austria, pdf, 264 kB)

**CR Belgium:** Published September 2002  
(AUDIT II Country Report - Belgium, pdf, 247 kB)

**CR Denmark:** Published September 2002  
(AUDIT II Country Report - Denmark, pdf, 245 kB)


**CR Finland:** Published May 2002  
(AUDIT II Country Report - Finland, pdf, size 1,1 MB)

**CR France:** Published May 2002

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**Motiva**




**AUDIT II**

**Country Report**  
**GERMANY**  
(Draft Version)

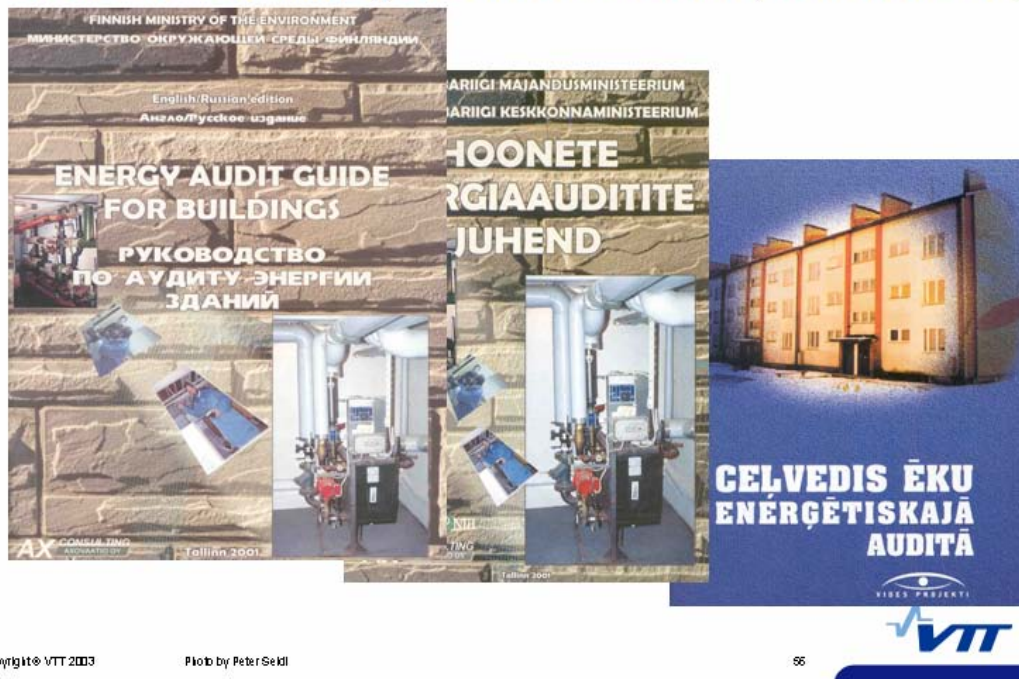
Michael Sattler  
Final Report 13.12.2002





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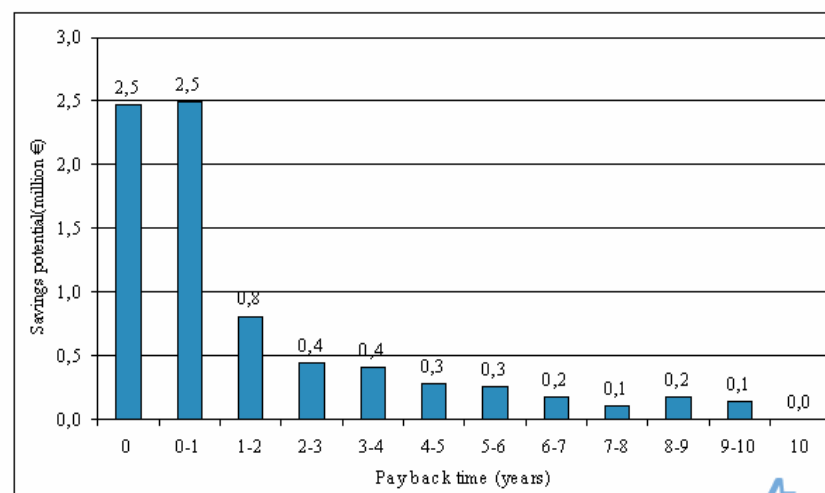
## Tools for auditors (Motiwatti-software, manuals etc.)



56

### Motiva

**Profitability of the proposed energy savings measures in the 1 265 buildings reported during period 1996-2001 (total 8,0 milj. €)**



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## Implementing energy saving measures and investments

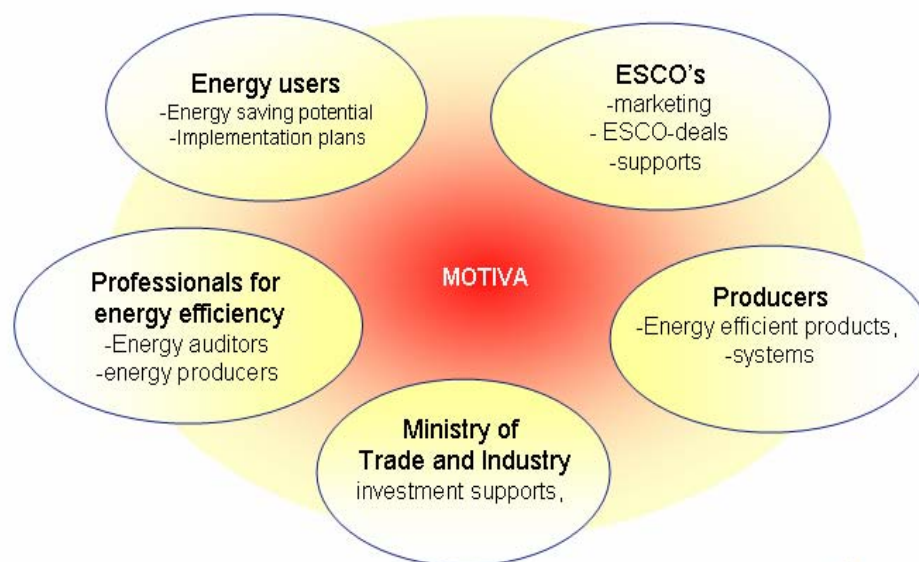
### -Short pay-back times

- audit customers normally implement and finance energy saving investments by themselves

### -Longer pay-back times

- suitable for ESCO companies
  - agreement periods normally 2...6 years
  - ESCO is responsible for the whole saving project (financing, saving guarantees, contracting, follow-up...)

### Motiva's role promoting ESCO-business in Finland



## ESCO-project register

- Target to promote ESCO-business
  - Contact information
  - Description of different kind and size of ESCO - projects
  - Following the ESCO- business volumes
- beginning : spring 2003

## Situation in 9.6.2003

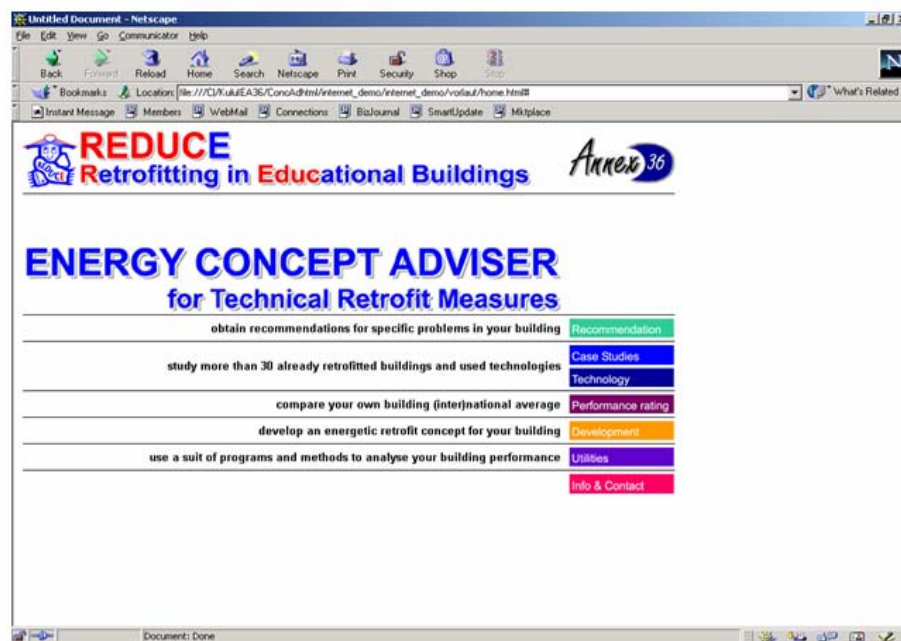
- Information got from three ESCO's
- Total number of projects 25
- Estimated total energy savings
  - Steam 42 400 MWh/a
  - District heat 18 400 MWh/a
  - Electricity 2 500 MWh/a
- Renewables
  - 220 MWh/a oil replaced by wood pellets
  - Electric heating replaced by heat pumps



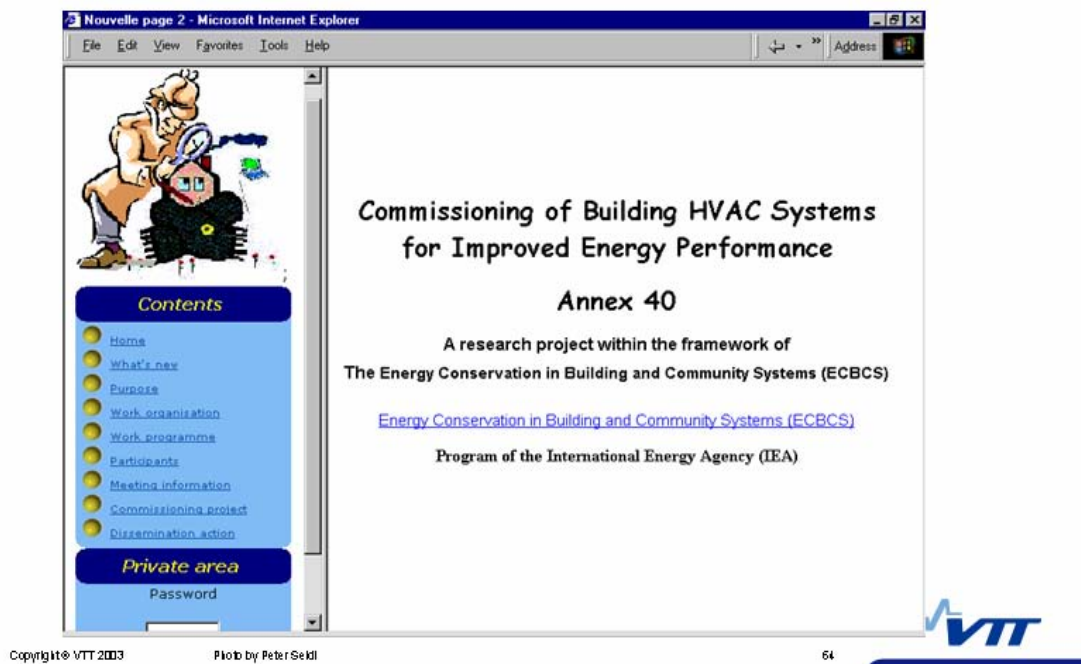
## Project examples

- heat recovery from industrial ovens
- heat recovery from exhaust air in industry
- improving the efficiency of a turbine
- replacing electric heating by heat pumps
- improving the control of a cooling systems in ice halls
- optimizing ice thickness in ice hall
- heat recovery from HVAC
- oil replacement by wood pellets
- many different heat recovery project in industrial processes

## International collaboration, like IEA Annex36

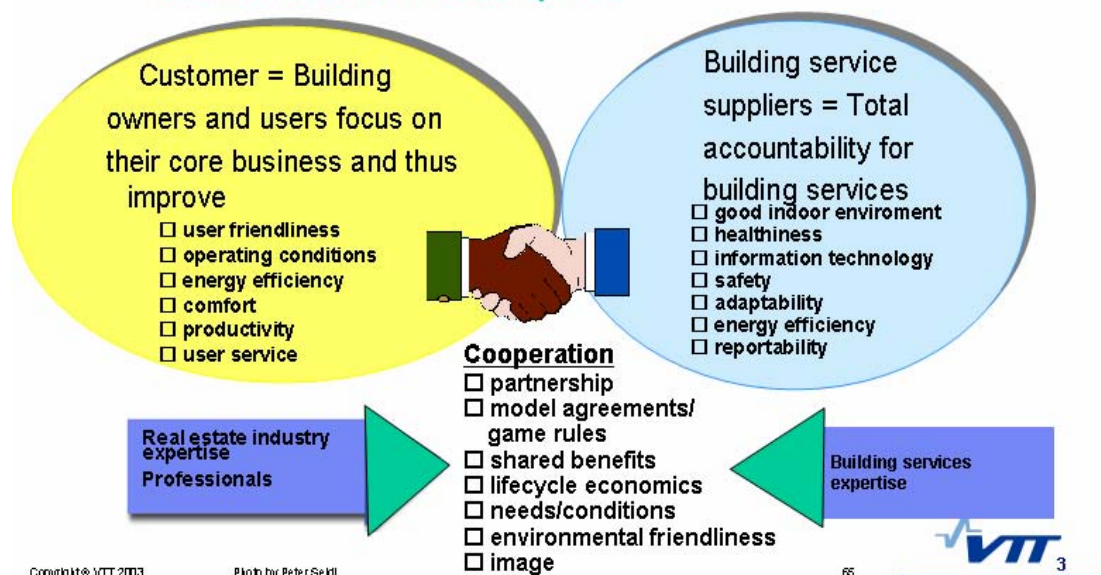


## Annex40 (<http://www.commissioning-hvac.org>)



## Partnership and networking

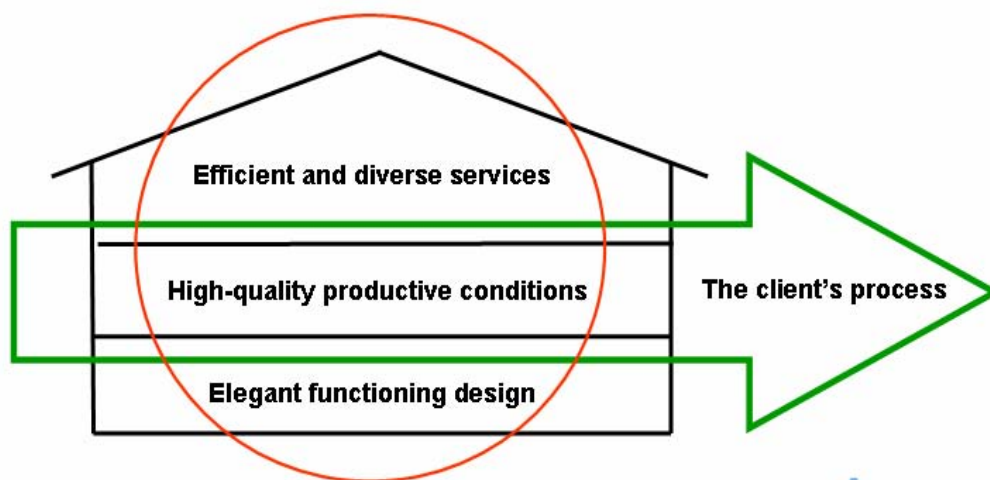
### Partners focus on their core expertise





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## The City of Espoo will purchase a functioning entity



## Kuninkaantie Senior High School



First public and private sector partnership project in Finland

The City of Espoo:

- purchases maintenance and user services from the project company
- pays only for services provided
- 28-year collaboration model, 25-year service agreement
- with the objective of transferring an optimum amount of project risks from the city to the private service provider

Service production to be launched in the autumn of 2003.

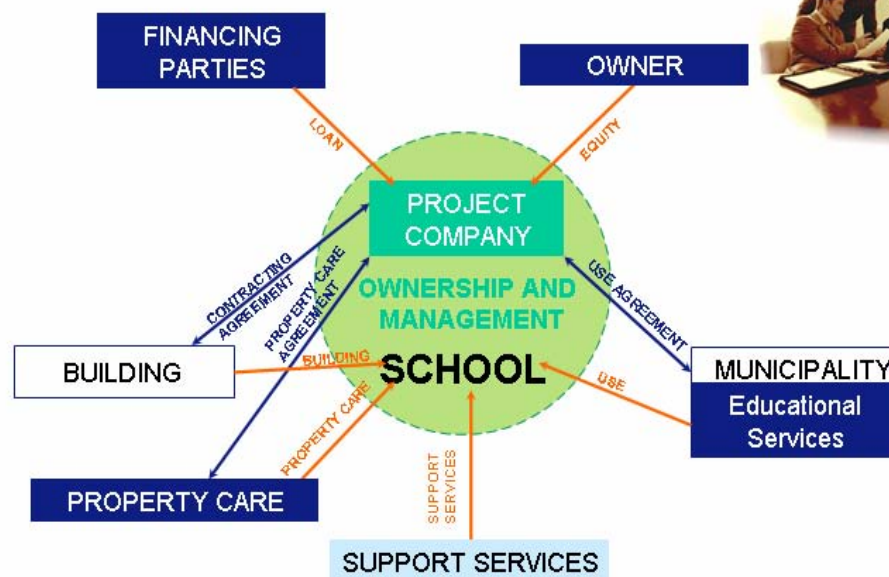
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68



## Roles and functions



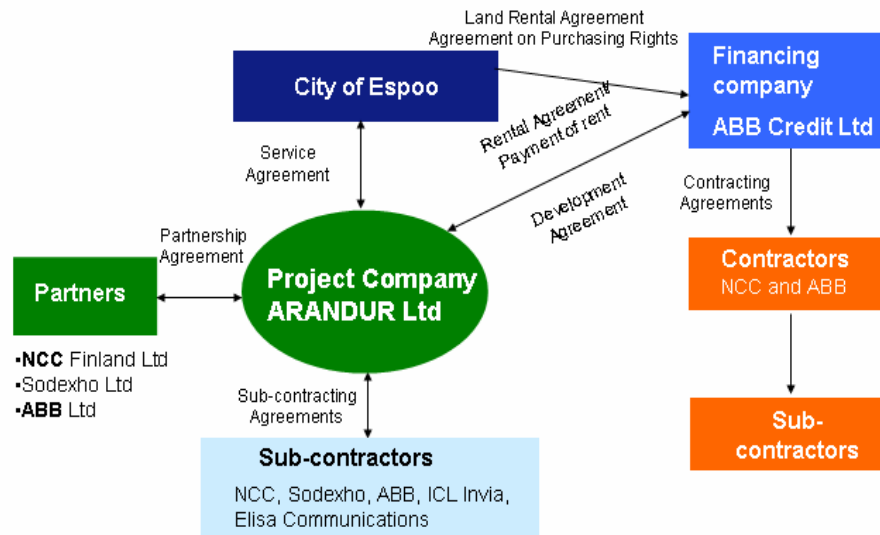
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## Agreements and contracts



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## Thanks for your attention!



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Pekka Huovila ([www.vtt.fi](http://www.vtt.fi)):



COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 11.5.2001  
COM(2001) 226 final  
2001.0098 (COD)

Proposal for a

DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on the energy performance of buildings

(presented by the Commission)

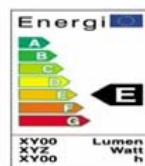
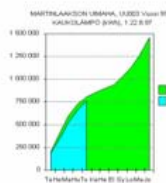
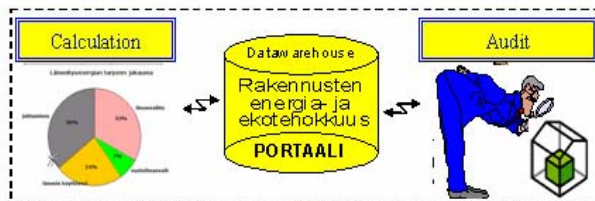


Building Energy Certification  
Energy Audit Procedures  
New Building regulations

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2. Tietojen siirtopäivitykset



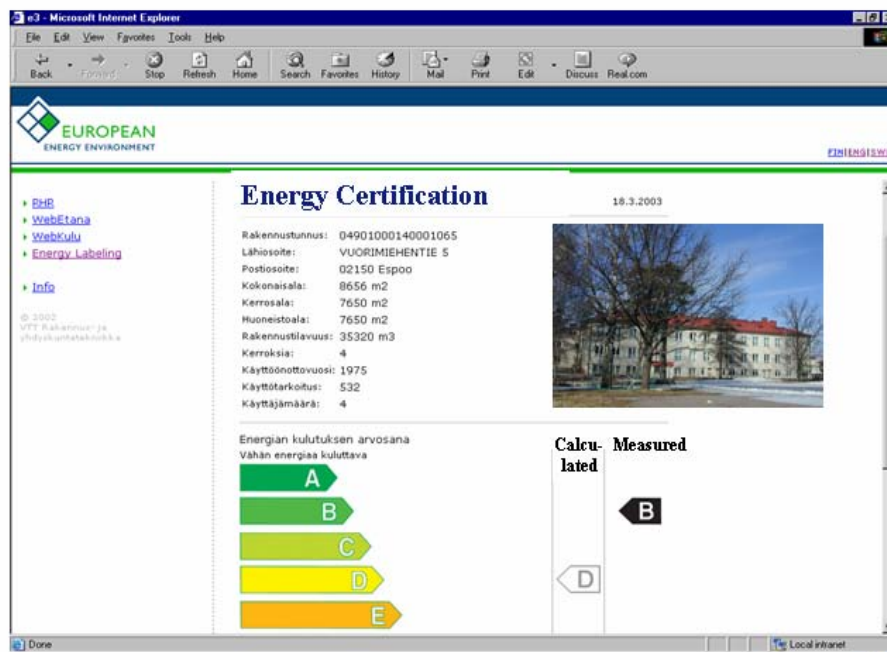
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## Energy Savings Performance Contracts - Vehicles and Financing Options

Presenter: Mr. Buster Barksdale, SAIC



# Contract Vehicles for Energy Contracting

8 Oct 03

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## Agenda

- Performance Contracts
- Contract Vehicles
- Financing

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## Performance Contracts

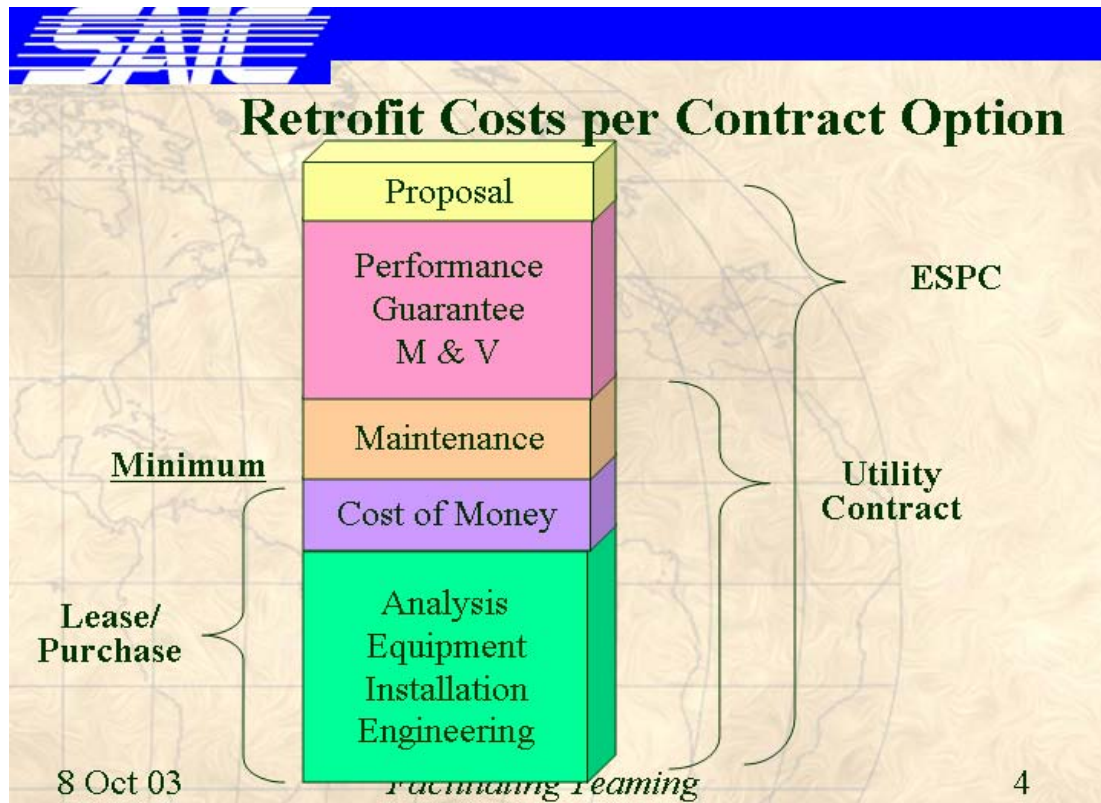
- ESPC
- UESC
- GSA

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**Contract Vehicles**

- USACE
- DOE
- GSA

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## Contract Vehicles USACE

- Types
  - 4 State
  - 46 State
- Access
  - USACE with basic funding
- Advantages/Disadvantages
  - Large Experienced Staff
  - Understands Army
  - Ties into USACE Infrastructure
  - Costs most to Installation
  - Slow Execution

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## USACE Contracts

4-State Area	46 State Area
(GA, SC, NC, VA)	(Remaining states plus DC and Puerto Rico)
Co-Energy	Abacus
Duke Solutions	CMS Viron
Honeywell	Duke Solutions
NORESCO	Energy Masters International
Select Energy	Honeywell International
Systems Corps	Johnson Controls
	NORESCO
	Select Energy Services
	Sempra Energy Services
	XENERGY

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## Contract Vehicles DOE

- Types
  - Regional
- Access
  - Local CO
  - DESC
  - Other CO
- Advantages/Disadvantages
  - Lower Cost
  - Flexible Execution Through any CO
  - Faster Execution
  - Does not Speak Army
  - Need Facilitators

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## DOE

Western	Central	Midwest	Southeast	Mid-Atlantic	Northeast
Honeywell	Duke	Cogenex	Duke	Cogenex	Honeywell
Johnson	Honeywell	Duke	Energy Masters	Honeywell	Invensys
NORESCO	Johnson	Johnson	Honeywell	Invensys	Johnson
Sempra	NORESCO	NORESCO	Johnson	NORESCO	NORESCO
	Sempra	Sempra	NORESCO	Select Energy	Select Energy
			Sempra		Sempra
					XENERGY

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## DOE ESPC

Geothermal	Photovoltaic	Solar Thermal	Bio Mass
Constellation	Select Energy	Industrial Solar	Award in January 2002
Duke	Sempra		
Energy Performance Services			
Enron			
Trane			

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## Contract Vehicles GSA

- Types
  - Basic Schedule
- Access
  - Local CO
  - GSA Dallas Specialized CO
  - Other CO
- Advantages/Disadvantages
  - Fastest Execution
  - Least Cost
  - No Technical Support
  - Lack of Contract Vehicle Familiarity
  - Needs Facilitator

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## Contract Vehicles GSA

- ID/IQ Contracts offering a Wide Range of Products and Services at Commercial Prices
- Best Value
- Commercial Practices
- Contractors may team with other Schedule contractors to offer a Total Solution.

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## Contract Vehicles GSA

- Simplified Ordering Procedures
- Flexibility
- Maximum Order Provisions
- Price Reductions
- Blanket Purchase Agreements
- Teaming
- Purchase Card
- Socio-economic goals

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## UESC

- A vehicle for developing, financing, and implementing comprehensive energy/water-conservation projects for federal facilities
- Utilities provide up-front project funding and agencies pay for the services over time on their utility bills
- Utilities have a long-term interest in their customers, and that's helped us get great deals that meet our needs.

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## UESC

- Financing
- Minimizes time and resources required for procurement
- One-stop shopping for turnkey project
- Dealing with known entity
- Payment through utility bill
- Flexibility in contract terms

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## UESC

### **10 USC 2865 and 2866**

- May enter into "sole source" procurement from gas or electric utilities to design and implement cost effective demand and conservation services
- May implement projects with a positive Net Present Value (measured over a period of 10 years or less)
- Can count water cost savings in their economic analysis

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## Financing

- 3<sup>rd</sup> Party
- BPA
- Lease
- Enhanced Use Lease

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## Summary

- Plenty of Options
- Need Facilitators Regardless of Option
- New Guidance will Help Process

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